AMENDMENT NO. 4 JUNE 2023

TO

IS 17263 : 2022 TEXTILES — POLYESTER STAPLES FIBRES — SPECIFICATION

(First Revision)

(*Page* 1, *clause* **1.3**, *see Amendment* 1) — Insert the following new clause after the clause **1.3**:

'**1.4** This standard is not applicable to Bio-degradable polyester fibre.'

(*Page* 1, *clause* **3.2**) — Substitute the following for existing:

'**3.2 Crimp Removal —** Crimp removal is the increase in length of fibre after complete removal of crimps at specified load expressed as a percentage of the straightened length.'

(*Page* 1, *clause* **3.3**) — Delete and renumber the subsequent clauses.

(*Page* 1, *clause* **3.9**, *line* 3) — Substitute 'specified temperature and time' *for* '180 °C for 30 min'

[*Page* 5, *Table* 3, *Sl No.* (vi), *col* (2)] — Substitute 'Crimp removal, Percent, *Min* (For filling nonwoven fibres only)' *for* 'Crimp removal, ercent, *Min* (For filling nonwoven fibres only)'.

[*Page* 6, *Table* 4, *Sl No.* (xiii)] — Delete entire row.

[*Page* 6, *Table* 4, *Sl no.* (xiv), *col* (1)] — Substitute 'xii)' *for* 'xiv)'.

[*Page* 6, *Table* 4, *Sl no.* (iv)] — Substitute the following for existing row:

iv)	Ultraviolet resistance, 144 h, Percent retained strength, *Min* (For UV resistant yarns only)	80	Annex F of IS 16481

(*Page* 7, *clause* 8.1) — Insert the following note under the clause:

'NOTE — The fibre manufacturer shall mark on the package whether the fibre is Disperse Dyeable [Conventional Dyeable (COD)/Stock Dyeable (STD)/Easy Dyeable (ED)], Cationic Dyeable (CD) or Easy Dyeable Cationic Dyeable (EDCD) for guidance of the yarn/fabric manufacturers.'

(*Page* 9, *clause* **9.3.1**, *line* 2) — Substitute 'acids/alkalis' *for* 'acids/alkalis/ageing'.

(*Page* 9, *clause* **9.3.1**, *line* 4) — Substitute 'acids/alkalis' *for* 'acids/alkalis/ageing'.

(*Page* 9, *clause* **9.3.3**, *line* 5) — Substitute 'acids/alkalis' *for* 'acids/alkalis/ageing'.

(*Page* 9, *clause* **9.3.3**, *line* 7) — Substitute 'acids/alkalis' *for* 'acids/alkalis/ageing'.

Price Group 2

(*Page* 10, *Annex* A) — Substitute the following for the existing entries for IS 3456 : 1966, IS 6359 : 1971, IS 16481 : 2016.

IS No.	*Title*
IS 3456 : 2022	Method for determination of water-soluble matter of textile materials (*first revision*)
IS 6359 : 2023	Method for conditioning of textiles (*first revision*)
IS 16481 : 2022	Textiles — Synthetic micro fibres for use in cement based matrix — Specification (*first revision*)

(*Page* 10, *Annex* A) — Delete the following reference:

‘IS No.	*Title*
IS 13162 (Part 2) : 1991	Geotextiles — Methods of test: Part 2 Determination of resistance to exposure of ultraviolet light and water (xenon arc type apparatus)
IS 7016 (Part 8) : 1975	Method of test for coated and treated fabrics: Part 8 Accelerated ageing’.

[*Page* 11, *Annex* C-2 (a)] — Substitute the following for existing:

‘Crimp balance or equivalent crimp measuring equipment’.

[*Page* 15, *Annex* G] — Substitute the following for existing:

‘ANNEX G

(*Table* 4)

MEASUREMENT OF PERCENT SILICONE ON FIBRE BY X-RAY FLUORESCENCE SPECTROMETER (XRF) AND ASH CONTENT METHOD

G-1 MEASUREMENT OF PERCENT SILICONE ON FIBRE BY XRF METHOD

G-1.1 Principle

Silicon percent in polyester is measured on X-ray fluorescence spectrometer. Pellet of polyester fibre is scanned on X-ray which directly gives concentration of elements.

G-1.2 Apparatus and Reagents

a) X-ray fluorescence spectrometer (XRF)
b) P-10 carrier Gas
c) Sample pellet
d) Standard sample for calibration

G-1.3 Potential Safety and Health Issues

G-1.3.1 XRF Unit

There is no potential safety and occupational health issue as such because radiation safety is well taken care of by the inherent highly standard safety features of the instrument through the use of shielding and interlocks, the operator is fully protected from any radiation hazard. High voltage electrical points are guarded by covers in the case and in no situation the cover is removed during the operation. ELCB and fuses etc. are provided on the live and neutral lines.

G-1.4 Preparation of Sample

Prepare the sample by pressing fibre sample in carver hydraulic press by simultaneous application of heat and pressure.

G-1.5 Operation of Pellet Press

Take 8 g to10 g of siliconized fibre sample and put into the die of pellet. Place the plunger inside the diameter and place in the proper place of carver press. Program the instrument for 10T/20T pressure, 250 °C temperature and for proper residential time setting. Remove the pellet after cooling. Condition the pellet for 5 min to 7 min and measure for percentage Si on XRF.

G-1.6 Procedure

G-1.6.1 Measurement of SiO_2 on XRF

Prior to measurement standardize the instrument with standard sample pellets of known SiO_2 content of different levels and of similar sample symmetry. Switch on the instrument and check the parameters for vacuum, career gas, voltage, X-ray tube etc. Open the measurement program on the PC. Put the sample pellet in the sample holder, close the lid. Start Read button. Read percentage SiO_2 result after complete scanning.

G-2 MEASUREMENT OF PERCENT SILICONE ON FIBRE BY ASH METHOD

G-2.1 Principle

Silicone finish is used on fibre for imparting soft feel. Polyester is hydrocarbon. On burning at high temperature carbon and hydrogen are oxidized and removed, only inorganic material is left in form of ash. TiO_2 and antimony inorganic materials are added in small quantity during polymer manufacturing stage. Silicon in form of emulsion is applied at draw line during staple fiber formation. So, we can determine silicon content in fiber easily through measuring difference in ash content before and after application of silicon on fiber.

G-2.2 Safety, Occupational Health issues

a) PPE’s like safety goggles, nose mask and apron are required.
b) Crucible is to be handled with care.

G-2.3 Apparatus

a) Analytical balance — Capable of weighing to an accuracy of 0.1 mg.
b) Muffle furnace — Capable of maintaining temperature up to 700 °C.
c) Tongs.
d) Heat resistance gloves.
e) Bunsen burner.
f) Silica triangle and tripod.

G-2.4 Analytical procedure

G-2.4.1 Dry the crucible in an oven at 105 °C for 20 min, then take it out and put it in the desiccator with a lid for conditioning to avoid moisture. Allow the crucible to cool for 20 min and then weigh the empty crucible nearest to 0.1 mg.

G-2.4.2 Weigh 5 g of spun tow fibre sample before silicon application in the pre-weighed crucible.

G-2.4.3 Put the crucible with the sample on bunsen burner to burn the sample.

G-2.4.4 Transfer the crucible in the muffle furnace which is already maintained at 550 °C ± 10 °C and keep the crucible inside for 3 h.

G-2.4.5 Take out the crucible from furnace with ash and partially cover it.

G-2.4.6 Transfer the crucible to the desiccator with a lid, allow to cool and take the final weight of the crucible nearest to 0.1 mg.

G-2.5 Calculation

$$\text{Calculation Ash percent} = \frac{[(\text{Weight of Crucible} + \text{Ash}) - (\text{Initial weight of Crucible})] \times 100}{\text{Weight of sample taken}}$$

G-2.6 Repeat all the above steps (**G-2.4.1** to **G-2.4.6**) with silicon treated fibre and calculate the percentage ash with formula given at **G-2.5**.

G-2.7 The silicone percentage shall be calculated by the following formula:

Silicone percent = [Percentage ash of siliconized fibre - Percentage ash of spun tow (Without silicon treatment)].'

[*Page* 17, *Annex* J-2 (b)] — Substitute the following for existing:

'Square standard tiles (white and black) with the instruments;'

(TXD 31)

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